

DOCUMENT RESUME

ED 059 349

VT 012 907

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TITLE What State Leaders Should Know About Cooperative Vocational Education.
INSTITUTION Ohio State Univ., Columbus. Center for Vocational and Technical Education.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
REPORT NO Inf-Ser-38
PUB DATE Mar 71
NOTE 26p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 1780-0773, \$.30)

EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Administrator Role; *Cooperative Education; Instructor Coordinators; *Leaders Guides; Program Administration; *Program Development; Program Evaluation; Program Improvement; Program Planning; State Supervisors; Teacher Education; *Teacher Educators; *Vocational Education

ABSTRACT

Based on a review of related literature, this document is designed to serve state supervisors and teacher educators interested in reviewing the key concepts relative to cooperative vocational education. The compact nature of the review and its organization into guidelines format should provide a ready reference for the practitioner seeking to develop and improve work-study programs in his state. Special attention has been given to (1) Essential Elements of Successful Programs, (2) Planning and Implementation, (3) Extension and Improvement of Programs, (4) Recruitment and Training of Coordinators, (5) Promotional Activities, and (6) Status of Evaluation. Related documents are available as ED 057 180, and VT 012 905 in this issue. (Author/JS)

ED 059349

WHAT STATE LEADERS SHOULD KNOW ABOUT COOPERATIVE VOCATIONAL EDUCATION



Information Series No. 38

VT 012 907

VT 012907



Clearinghouse on Vocational
and Technical Education

preface

This publication is designed to serve state supervisors and teacher educators interested in reviewing the key concepts relative to cooperative vocational education. The compact nature of the review and its organization into guide line format should provide a ready reference for the practitioner seeking to develop and improve work-study programs in his state. Much has been written on cooperative vocational education. However, the authors have been selective by citing references believed to be especially useful to state supervisors and teacher educators.

The basic reference on this topic is the *Review and Synthesis of Research on Cooperative Vocational Education* by Harold R. Wallace. This reference and related publications on the same topic for local administrators and for teacher coordinators are available from The Center.

The profession is indebted to Edwin York and Roy Butler for their scholarship in the preparation of this report. Recognition is also due Harold R. Wallace, Utah State University; Eugene Dorr, Assistant State Director of Vocational Education, Arizona; and Edward T. Ferguson, Distributive Education Specialist at The Center, for their critical review of the manuscript prior to its final revision and publication. J. David McCracken, Information Specialist at The Center, coordinated the publication's development.

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The material in this publication was prepared pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

August, 1971

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What State Leaders Should Know About Cooperative Vocational Education

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contents

Essential Elements	1
Planning, Implementation	2
Extension, Improvement	2
Recruitment, Training	6
Recruitment	6
Certification	6
Preservice Training	8
In-service Training	9
Promotion	11
Evaluation	12
Bibliography	15

introduction

The potential is evident for expanding cooperative vocational education as an instructional strategy featuring a careful coordination of school-based learning with paid employment. Congress has given it priority in the 1968 Vocational Education Amendments. Local citizens' groups are impressed with its immediate benefits. Business and industry are increasingly interested in assisting with educational offerings. All states have provisions for cooperative programs in their State Plans.

The purpose of this publication is to suggest to states how cooperative vocational education could go much further toward becoming an integral part of the total educational system. It is hoped the information presented will provoke state leaders to see their decisions in a new light. State leaders are considered to be personnel in the state department of public instruction, state directors and supervisors of vocational education, teacher educators, curriculum specialists, advisory committee members, and others who may be involved in assisting with the development, maintenance, and extension of vocational education programs.

The writers have searched intensively in the ERIC system and extensively in a wide variety of sources. Possible suggestions have been gleaned from both obvious and rather unlikely places. The force of these suggestions is gently persuasive: here are some likely possibilities to consider in strengthening cooperative vocational education programs.

The contents of this document provide an overview of key points and a key reference list of other reports considered to be worthy of further study.

essential elements

There is a lack of formal research to fully substantiate all of the essential elements of effective cooperative vocational education programs. However, reported experience spanning three-quarters of a century has shown that high quality and successful programs can become a reality through a combination of the following elements:

- Effective advisory committees composed of representatives from business, industry, labor, the school, and students enrolled in cooperative programs.
- A well qualified and highly dedicated teacher-coordinator.
- Support and cooperation of school administrators and faculty.
- Community involvement in planning, organizing, and supporting cooperative programs.
- Development and maintenance of an effective public relations and promotional program.
- Adequate funds to support cooperative vocational education programs.
- Prevocational education and guidance services which prepare students to select appropriate training opportunities.
- Placement and instruction matched to the students' career interests, abilities, and aspirations.
- Effective selection and development of training sponsors and training stations.
- Written training agreements and individual training plans developed and agreed upon by the employer, student, parent or guardian, and coordinator.
- Full wages and credit toward graduation for on-the-job training.
- Adequate time for the teacher-coordinator to supervise in-school and on-the-job learning.
- Related instruction focusing on technical competencies, career development, and occupational adjustment.
- Adequate facilities, equipment, and materials to provide instruction related to the students' job and career goals.
- Compliance with all state and federal labor laws.
- Continuous evaluation and revision.
- Appropriate co-curricular activities including student organizations patterned after the professional and trade associations in the occupation areas served by the program.

All of these essential elements must be well understood by state level personnel and others who are involved in supporting and providing services for cooperative vocational education programs.

planning, implementation

Planning cooperative vocational education programs is a continuing process involving the following functions:

- Continuing investigations of the employment situation in the state or locality, the characteristics of students, existing educational programs (both private and public) and innovative educational projects.
- Effective utilization of all available resources.
- Assignment and/or delegation of responsibility and authority.
- Development of procedures, policies, and guiding principles.

Implementation of cooperative vocational education programs involves these processes:

- Assisting local schools to justify the need for cooperative programs.
- Identifying and acquiring the necessary resources.
- Organizing the program.
- Developing the program.
- Maintaining and supervising the operation of programs.
- Adjusting, evaluating, and improving the program.

All of the essential elements noted in the preceding section of this paper and the factors for extending and improving programs noted in the following sections should be kept in mind during the planning and implementation stages.

extension, improvement

Local interest in extending and improving cooperative vocational education programs can be stimulated by tactful and energetic leadership and supervision at the state level. A Minnesota guide (1969) indicates that the key to effective supervision and leadership is the appointment of qualified supervisory personnel who are:

- Experts in cooperative vocational education.
- Able to work harmoniously with those whom they will supervise and with the many individuals and groups who are involved with the program.
- Well informed about 1) occupations; 2) manpower needs; 3) characteristics of student groups and communities; 4) procedures for establishing new programs; and 5) systems for planning and budgeting.
- Able to identify, enlist, and develop personnel who will be responsible for implementing programs.
- Able to assist local educational agencies in developing and maintaining cooperative programs which serve local needs and meet or excel standards set forth in the State Plan.
- Leaders in vocational education.

A number of activities and responsibilities which state level personnel must assume in extending and improving cooperative vocational education programs are noted in the literature. Examples are as follows:

- Provide information to schools, businesses, industries, and labor organizations about the availability of programs to meet student and employer needs.
- Actively enlist the support and cooperation of other agencies such as the State Department of Labor, rehabilitation departments, unions, associations of employers, chamber of commerce, and trade associations.
- Develop communications within the divisions of the state education department concerning the purposes of cooperative vocational education, course approval, certification, and planning and budgeting.
- Provide assistance in assessing and meeting student needs.
- Provide local district with clear and precise materials that are needed to gain state approval of cooperative programs.
- Constantly review certification standards and revise them when necessary to insure a supply of trained coordinators in many different areas.
- Develop in-service programs for coordinators which are geographically accessible in all areas of the state.
- Provide leadership in establishing better understanding and communication among the various cooperative programs and their coordinators.
- Encourage innovation and experimentation, particularly in the areas of cooperative education for the handicapped, disadvantaged, and special programs for state institutions and private schools.
- Provide leadership in developing a program for working with organized labor.
- Protect the interests of employers by standardizing criteria for student screening and making certain that the legalities of employment are not in conflict with the mandates of cooperative programs.
- Act as a clearinghouse for information on state and federal labor laws.
- Make certain that cooperative programs are not in conflict with each other and that they do not precipitate child labor violations.
- Assist in developing meaningful class activities and be concerned with the placement of pupils in business or industry.
- Meet the challenge of competing agencies by maintaining quality programs of cooperative education.
- Make provisions for follow-up studies of graduates and assume that such evaluation is incorporated into every approved program.
- Develop periodic evaluation programs, make recommendations, and follow up these recommendations.

- Provide financial support for cooperative vocational education programs.
- Advise local schools on research and development projects and help in conducting research for improvement of cooperative vocational education programs.
- Sponsor and finance curriculum materials centers to assist teacher-coordinators in locating, developing, and learning to use instructional materials that will most effectively serve the needs of the students.
- Develop a system for recruiting, selecting, training, and constantly upgrading the performance of effective teacher-coordinators.
- Develop a system for providing and maintaining the facilities and resources required for effective operation of the program.
- Develop and maintain effective advisory committees.
- Develop and maintain an effective public relations program.
- Develop a program of vocational guidance, including appropriate placement services and activities.
- Develop a system for integrating the cooperative program with the education and training preceding and following it.
- Develop a system to provide appropriate personal counseling, remedial or advanced instruction, or other special services as required by individual students.
- Provide for effective selection and development of training sponsors and training stations.
- Provide for the development and utilization of appropriate on-the-job training plans for each student.
- Develop and maintain a program for utilizing the educational resources of the community to supplement and enrich the institutional program.
- Provide for appropriate co-curricular activities including student organizations patterned after the professional and trade associations in the occupational areas served by the program.

The following are some dimensions and activities into which cooperative vocational education programs should be extended according to a recent national institute directed by Billings (1970):

- Students who could benefit from the program should be attracted more effectively.
- Additional occupations and new careers should be included in cooperative programs.
- Instructional plans should be developed for each student.
- Area supervisory personnel should be employed to develop new programs.
- Scheduling patterns should be made more varied.
- Schools in the same area should cooperate.

- Programs should be added for students below age 15 that tend to be dropouts; for the handicapped; for the socially maladjusted; and for the culturally deprived.
- Plans for supervised employment training during the summer months should be instituted in an effort to provide cooperative educational opportunities for a broader segment of students.
- State departments of education should increase the effectiveness and impact of cooperative education by providing and filling supervisory positions for the program at the state level.
- Area post-secondary vocational schools should build cooperative education components into their instructional programs.

Several alternatives and organizational approaches can be encouraged to extend cooperative programs. For example, Florida has developed a new type of cooperative vocational program to help students make the transition into the world of work. Students are allowed to accumulate academic credit through successful employment on a job after completing Grade 10 or 11. A written agreement is required and it must be approved by the local school board and signed by the student, parents or guardian, the teacher, and the employer. The agreement specifies the terms of employment and the provisions for academic credit. One credit is authorized for each 288 hours of successful work experience and students may graduate from high school with a minimum of 15 credits earned in Grades 10 through 12. In order to participate in the program, students must have:

- Reached 16 years of age.
- Earned at least 10 high school credits.
- Earned at least one credit in a vocational course.
- Developed job proficiency.

If the agreement is cancelled by any party, the student may return to high school at any time.

Tapp (1969) noted the benefits and appropriateness of implementing a summer training program to prepare cooperative vocational education students for employment. This approach tends to eliminate a situation in which students are not placed in training stations until well into the school year.

Douglass (1969) reported on numerous cooperative industry-education programs for the disadvantaged and culturally deprived. This report is recommended for in-depth review to obtain ideas for extending and improving cooperative vocational education programs.

Many variations and innovative approaches to cooperative programs are being utilized throughout the country to serve the needs of youth, and new developments are reported each year.

State leaders should communicate information about tested and proven cooperative vocational education approaches to local administrators, teacher-coordinators, and others. The abstracts contained in publications of the ERIC system can serve in a significant way to identify relevant research findings on a continuing basis.

recruitment, training

Effective teacher-coordinators are extremely important to cooperative vocational education. They are often referred to as the "backbone" of the program. The expansion of cooperative programs will increase the demand for good teacher-coordinators. State level personnel can help local school administrators to locate, recruit, and train desirable candidates.

Recruitment—Assistance in locating and recruiting effective teacher-coordinators can be enhanced through an understanding of the performance characteristics of successful teacher-coordinators. Information gleaned from reports by Kaufman (1967), Loyd (1969), Helling (1965), Huffman (1967), Wallace (1970), Lesh (1966), and the University of Minnesota guide (1969) reveals that the effective teacher-coordinator:

- Shows initiative in promoting and administering a cooperative program of high quality.
- Does considerable counseling with cooperative vocational students and communicates well with the school counselor.
- Has good public relations with students, school personnel, parents, and the community.
- Provides suitable students for specific employers and regularly visits students on-the-job.
- Relates to students in a personal way, demonstrating creativity, a student-centered teaching approach, insight, personal flexibility, critical self-evaluation, and willingness to listen.
- Is dynamic, and willing to expend effort and energy beyond the minimum required.
- Communicates a positive, accepting, and caring attitude toward all students.
- Possesses the stamina and good health necessary to meet a rigorous schedule.

In addition, there appears to be little doubt that the personal qualities, subject matter knowledge, and teaching skills of the teacher-coordinator are important to performance. The basic problem seems to be a matter of identifying and determining the kinds and amount of competencies needed to perform in an effective manner. This problem is reflected in the variations of certification criteria and standards discussed below.

Certification—Since teacher-coordinators are considered to play a pivotal role in cooperative vocational education programs and the present supply is rather limited, certification criteria and standards are of concern to state leadership personnel. Cotrell (1970) presented a preliminary summary of a national study on teacher certification requirements for each type of secondary cooperative vocational education program. Warning that the effort to summarize may have resulted in oversimplification of the unique differences in certification, he cited the following findings:

While the certification requirements tended to vary considerably from state to state, there were common threads of basic requirements. As one examined these basic standards, the following tended to be the picture. . .

- Education—bachelor's degree
- Occupational experience—two years
- Professional courses—one or two courses in cooperative education (coordination and public relations) in addition to the professional courses required of teachers
- Technical courses—appropriate major in the baccalaureate

Based on the preliminary results of the survey and experience with all levels of involvement with cooperative vocational education programs, Cotrell (1970) recommended that:

- A better examination of performance criteria as compared with time criteria is needed. The years of occupational experience, as widely known, mean nothing if each week and year is a repetition of the same few tasks.
- More consideration should be given the supervised occupational experience requirement that presently exists in the teacher education institutions of some states. The nature and extent of this experience may be controlled to provide the candidate with an education to attain either the general or vocational objective values required.
- The proper values of occupational experience need to be examined. Is knowledge of the world of work and what it is like to earn a living in an occupation the general education desired? Or is there another objective, such as mastery of the skills of an occupation to prepare to teach it?
- Some measurement of one's potential for becoming a teacher-coordinator must be developed. The proper criteria are needed for selection of personnel who, with the proper guidance and a minimum of training, will become fully qualified teacher-coordinators.
- An internship after or as a part of the training is needed to determine one's competency and readiness to accept the full responsibility of being a teacher-coordinator.
- More study of certification requirements is needed to find those criteria which really make a difference. For example, we have no evidence to support the bachelor's degree as a standard but most every state requires it.
- There must be more agreement among the states on the particulars of certification standards to make reciprocal arrangements on credentials possible, as presently exists for elementary education in a majority of the states.

The Carnegie Commission study of higher education (1971) offers a real challenge that may have implications for the preparation of teacher-coordinators. The commission report recommended:

- Appropriate credit should be given for various types of experience outside the formal course structure.
- Employers should hire and promote on the basis of performance rather than degrees.
- Routes of entry and promotion, other than full-time college attendance, should be utilized in various professions.
- Bachelor degree programs should be shortened by one year.
- Opportunities should be created for persons to re-enter higher education throughout their active careers to obtain appropriate degrees and certificates.
- Opportunities for students to alternate employment and study should be expanded.
- Alternate routes to degrees should be provided to increase the accessibility of higher education for individuals who are unable to attend college due to work schedules, geographic locations, or responsibilities in the home.

In light of these recommendations and the potential shortage of teacher-coordinators, it appears that new and stronger relationships between business and industry, state departments of education, teacher education institutions, and local education agencies will be needed to bring about changes in preservice and in-service teacher education programs and certification standards.

Preservice Training—Presently, the preparation of cooperative program teacher-coordinators includes three types of general objectives. They are as follows:

- The development of technical competencies such as occupational skills, attitudes, and knowledge.
- The development of professional abilities such as understanding curriculum development, methods of teaching, teaching-learning processes, human development, guidance, public relations, coordination, and program administration.
- The development of community sensitivity and awareness, such as knowing community structure and action, and the fundamentals of group relations.

Crawford (1967) conducted a study to determine the job performance requirements and activities of distributive education coordinators. Based on the critical tasks and competencies required of students who would ultimately be employed in distributive education occupations, a specific list of objectives was developed which should be mastered by prospective teacher-coordinators. This study has implications for determining the content of teacher training programs in all cooperative programs. The teacher-coordinator would be in a better position to understand the career training needs of their students if this approach and information were utilized to determine the content of teacher education programs.

According to Wallace (1970), few studies have been conducted on the broad strategies and specific tactics relating to instructional techniques and methods of training teacher-coordinators. He cited two studies, one by Pratzner and Hanson (1969) who found that motion pictures with sound were more effective than traditional instruction in the presentation of fundamental concepts of teaching to craftsmen who were to become part-time industrial education instructors, and a study by Brown (1968) who found that micro-teaching produced significant levels of change in teaching skills.

A recent study by Harrington (1970) tested a self-instructional package designed to provide preservice teacher-coordinators with interviewing skills. A video camera, microphone, video tapes, television monitor, and two video tape recorders were needed to use the package. Most of the participants in the study indicated that they were better prepared to conduct employer-coordinator interviews because of their experience with the self-instructional package.

On pages 76-83 in the *Review and Synthesis of Research on Cooperative Vocational Education*, Wallace (1970) discussed several experimental pilot or demonstration projects. Readers are referred to these pages for further information on preservice and in-service teacher education research findings.

In-service Training—Teachers, counselors, and administrators must initially study their communities intensively and extensively to determine how community resources can be effectively utilized for the vocational development of students. State leaders can provide learning experiences for these professionals that will help meet the challenge.

An excellent occasion for such activity is a community resources workshop. Ideally, the workshop would be an intensive, university-sponsored summer course, normally four to six weeks in length, that offered graduate credit to teachers and local administrators.

Suggestions for planning, carrying out, and evaluating such a conference can be found in a pamphlet entitled *Community Resources Workshops: A First Step Toward Better Industry-Education Cooperation* (National Association of Manufacturers, 1970).

Answers noted for the following questions will aid in conducting successful conferences, workshops, or seminars:

What Are The Characteristics of Good Workshops?

- Objectives that are clearly defined and based upon the expressed needs of participants in the workshop.
- Graduate credit granted by a local university interested in co-sponsoring the workshop.
- Willingness of business and industry to co-sponsor the workshop.
- Support and cooperation of the local school.
- Freedom for a participant to work on a project of his or her own choosing, individually or in small groups.

- Voluntary development of solutions to real problems related to local situations.
- Adequate physical facilities.
- Evaluation and follow-up conducted by the workshop participants, the workshop's steering committee, and the sponsoring agencies.

What Can A Workshop Accomplish?

- Discover needed information about cooperative education.
- Discover teaching resources in the community.
- Problem-ventilating and problem solving; solution-ventilating, and solution-utilizing.
- Encourage communication and cooperation among all segments of the community and the schools.
- Assist educators in meeting changes.
- Assist educators and others to become familiar with the ERIC system and its potential as a source of information for improving cooperative programs.

How Are Good Workshops Planned?

Committees should be used to gain full participation and coordinate individual effort. Develop committees on the basis of actual need. Possible committees are:

- Planning Committee
- Publicity Committee
- Hospitality Committee
- Bulletin Board Committee
- Instructional Materials Committee
- Field Trip Committee
- Diary and Evaluation Committee
- Closing Banquet Committee

Budget constraints and time limitations must be faced realistically. Selected participants can serve on planning committees with state leaders. All committees must function properly to facilitate the development of an effective and meaningful workshop program.

What Are Some Typical Problems That Might Be Included In A Workshop?

Major deterrents to developing cooperative vocational education programs and other problem areas may provide good topics for workshops, such as:

- Increasing the knowledge and/or commitment by school administrators.
- Solving transportation problems.
- Coping with limited job training opportunities.
- Adjusting to the limitations of time in the schedule.
- Gaining the endorsement of the guidance department.

Other aspects of long-range development might be included in workshops, such as:

- Innovative approaches in cooperative education programs.
- Intensive coordination of community resources.
- Special evaluation projects.
- Development of models.
- Aspects of 12-month programs.
- New aids to student self-understanding.
- Measurement and prediction of work attitudes.

What About Group Dynamics For Workshops?

Workshops or seminars concerning cooperative vocational education may include recent and reliable group procedures to emphasize the value of cooperativeness and to provide participants with direct experience on the nature and problems of cooperative group action. Leaders of such workshops or seminars should be open but cautious about using group dynamics techniques. Training in group dynamics should be experienced by leaders before they attempt to use the technique.

Group dynamics techniques of value to cooperative vocational education conferences should feature the following: 1) actually develop insight and skills related to cooperativeness, 2) be relatively unobjectionable and unthreatening to participants, and 3) be of a reasonable length of time. Three group techniques which meet these qualifications have been prepared by Mial and Jacobson (1970).

Properly structured group dynamics sessions can help participants to see themselves and their students in a realistic and personal way.

promotion

It is the prime responsibility of state-level personnel to continually strengthen relationships with all persons and groups that may have an impact on vocational education programs.

An important job of leaders concerned with promotional activities is to clarify the purposes of cooperative vocational education programs.

Cushman's (1967) study showed that students and their parents often expect these things.

- Educational values
- Specific training for an occupation
- Academic credit
- Varied and interesting assignments
- Supervision that is pleasant, fair, and helpful
- At least the minimum wage
- Opportunities for further training

Employers included in the study registered these expectations of the cooperative program:

- Students should work long enough at one task to be productive and worthwhile.

- Employers wanted to be involved in selecting students.
- Students would have good work habits and desirable personal attributes.
- Students would perform a variety of tasks.
- The school should provide specific occupational training.
- The teacher-coordinator should provide effective coordination and troubleshooting.

Skillfulness in dealing with this potential problem is an important aspect of developing and promoting effective cooperative vocational education programs.

State-level involvement and participation in such activities as assembly programs, personal conversations, press releases, pamphlets, displays, student-to-student recruiting, mass media spots, newsletters, community resource workshops, recognition banquets, and many other forms of promotion are all important aspects of cooperative vocational education program development, maintenance, and renewal.

The following suggestions should help to make promotional activities more effective:

- Publicize the involvement of persons related to cooperative vocational education, such as educators, students, parents, employers, and other specific groups such as the State Advisory Council for Vocational Education, the State Division of Vocational Education, and professional associations.
- Develop a pattern of promotion which involves both proven and innovative approaches.
- Learn from other states and communicate information to local leaders.
- Evaluate the promotional activities and make necessary adjustments.

In addition, the results of evaluation and follow-up studies which reflect the success of students in the program, and the success of those who have graduated, can be used to promote cooperative programs at the state level.

evaluation

Provisions for evaluation of vocational education programs are in all state plans and usually in local plans. However, a universally accepted model for evaluating cooperative vocational education programs does not exist at the present time. Perhaps this is because evaluation planning is complicated due to the various expectations and concepts of vocational educators, school administrators, counselors, employers, legislators, employment groups, and others involved with the program.

The growing pressure for more effective measures of cost-benefits, and accountability in general, calls for the development of a uniform plan

for collecting accurate and consistent data about cooperative vocational education programs, as well as the total vocational education program.

Rowe (1970) emphasized that the model system for evaluation should be able to measure the effectiveness of a cooperative program of 1) any size, 2) any specialized area, and 3) any state or community. Further emphasizing that many of the important benefits and student outcomes of cooperative vocational education programs cannot be quantified, he made the following recommendations:

- Further research is needed in the area of evaluation where emphasis can be placed on depth. In-depth research could be by states where certain kinds of programs are more prevalent than in other states.
- More detailed behavioral objectives should be developed for each kind of cooperative vocational program or a program designed with the same desirable outcomes. This will provide a standardized basis for evaluation.
- A cost-benefit approach seems to be a bit premature when we cannot at this time adequately measure the social benefits from such a program and, therefore, identify the social costs (and outcomes) to such a program.
- If follow-up data is to be used in the evaluation process of comparing programs in cooperative education, then, not only should it be complete, but it should be utilized no later than one year after completion of the program. It can then be assumed that the behavior of the young worker was affected at least somewhat by the program.
- A data bank is still an adequate idea since "follow-up" information can be utilized for research studies of various kinds . . . having implications for evaluation. The data should be collected in such a way that it can be computerized and should be collected at the conclusion of every school year to make it easily accessible for graduate studies and all kinds of research.
- Further research definitely must be done in the area of evaluation.

Currently and in the past, the following items have been included in the evaluation of cooperative vocational education programs:

- General program goals.
- Cost-benefits of the program.
- Follow-up studies on the effectiveness of cooperative programs as perceived by parents, student graduates, employers, and other appropriate individuals.
- Follow-up data on students after graduation at one, three, and five-year intervals to determine 1) retention in same job, 2) employment in related jobs, 3) additional education taken or needed, 4) unemployment history, 5) income, advancements, and job duties, 6) impact of the program on potential dropouts, and 7) youth, unemployment rates, labor market needs and number being trained for specific occupational fields.

- Number of students served by cooperative programs as compared to the percentage that could benefit but are not enrolled.
- Number, distribution, location, and kinds of cooperative programs available in the state.

Specific operational areas of local programs that are often evaluated include a determination of the effectiveness of:

- Related classroom instruction
- On-the-job training and training stations
- Youth club activities
- The teacher-coordinator
- Guidance and placement services
- Suitability of forms and records in use
- Promotional activities and student recruitment

Numerous publications are available on evaluation. Reports by Starr and others (1970), Sharp (1966), Hamlin (1967), Warmbrod (1968), Kraft (1969), Koo (1970), and the American Council on Education (1970) are examples of reports concerning the evaluation of the total vocational education program. These sources of information and others listed in the bibliography may be useful in planning the evaluation of cooperative vocational education programs at the state level.

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4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;
5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and in-service education program;
6. TO PROVIDE A NATIONAL INFORMATION RETRIEVAL, STORAGE, AND DISSEMINATION SYSTEM FOR VOCATIONAL AND TECHNICAL EDUCATION LINKED WITH THE EDUCATIONAL RESOURCES INFORMATION CENTER LOCATED IN THE U.S. OFFICE OF EDUCATION.